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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,334	08/03/2001	Alexander Lifson	11670.00006	4968

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EXAMINER

NORMAN, MARC E

ART UNIT PAPER NUMBER

3744

DATE MAILED: 04/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,334

Applicant(s)

LIFSON, ALEXANDER

Examiner

Marc E. Norman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 is/are allowed.
- 6) ☒ Claim(s) 4-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Reissue Applications

The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Claim Rejections - 35 USC § 251

Claims 4-38 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

Claims 4-38 are all broader than claim 1 of the original patent application in that they fail to recite the following subject matter:

A fluid path extending from a point intermediate said condenser and said expansion device to said compressor at a location corresponding to an intermediate point of compression in said compressor;

A bypass line connected to said fluid path and said suction line;

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A solenoid valve in said bypass line;
Means for rapidly pulsing said solenoid valve in said bypass line whereby the rate of flow of bypass to suction line is modulated.

This subject matter was surrendered because this limitation was added to original application independent claim 1 for the purpose of making the claim allowable over a rejection made in the application. Even though applicant made no argument on the record that the limitation was made to obviate the rejection, the nature of the addition to the claim (i.e., that Applicant added subject matter indicated in the Office Action as being allowable) shows that the limitation was added in direct reply to the rejection.

For purposes of completeness, the claims are further examined on their merits below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 5, 8, 9, 12, 14, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kountz.

As per claim 4, Kountz discloses compressor 10 having a fluid suction port and fluid discharge port and valve 21, in fluid communication with the compressor, operatively cycled via a pulse width modulated solenoid in order to modulate compressor capacity (see column 3, lines 24-47). The cycle of the valve is clearly less than the time constant of the load on the

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compressor since the valve is pulsed on and off repeatedly in order to adjust the stroke of the compressor. Accordingly, the cycle time is shorter than the response time of the system to modulate compressor capacity.

As per claim 5, Kountz discloses a capacity controller (circuitry of Figure 1) operative to generate a control signal corresponding to a desired capacity modulation (see column 3, lines 41-45 regarding modulating compressor displacement) and operatively connected to valve 21 to send capacity control signals (via solenoid coil 24). The short cycling time is discussed above regarding claim 4.

As per claim 8, Kountz discloses valve 21 being a solenoid valve (see column 3, lines 26-27).

As per claim 9, see discussions of the claims 4 and 5 regarding the compressor, refrigerant flow line, capacity controller, and valve.

As per claim 12, see discussion of claim 8, above.

As per claim 14, see discussions of the claims 4 and 5 regarding the compressor, refrigerant flow line, capacity controller, and valve, and of claim 8 regarding the valve being a solenoid valve.

As per claims 33 and 34, see discussions above of claims 4 and 8, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, 10, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kountz in view of Benevelli et al.

As per claim 6, Kountz does not specifically teach that the valve is cycled between fully opened and fully closed positions. Benevelli et al. teaches valve 50 being cycled between a fully open and fully closed position (see column 3, lines 61-64). Such cycling is a common feature of reciprocating valves and would have been obvious to one of ordinary skill in the art to apply to the valve of Kountz for the purpose of taking full advantage of the valve capacity.

As per claim 7, Kountz does not specifically state that the control circuitry of Figure 1 comprises a microprocessor. Benevelli et al., however, indicates that the control system 10 therein may comprise a microprocessor-controlled device (see column 2, line 62 – column 3, line 11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a microprocessor control to Kountz for the purpose of utilizing the well-known programming and calculating efficiencies that microprocessors provide.

As per claims 10 and 11, see discussions above of claims 6 and 7, respectively.

As per claim 15, see discussion above of claim 7, respectively.

Claims 17-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kountz.

As per claim 17, see discussions of claims 4 and 5 regarding the compressor, capacity controller and valve. Kountz further teaches an injection port (Figure 1, at bottom side of compressor 10) and a discharge port (Figure 1, at right side of compressor 10). While Kountz

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does not specifically discuss the compressor comprising a compression chamber, official notice that compression chambers are common and obvious features of compressors.

As per claim 19, Kountz teaches valve 21 being upstream of the injection port.

As per claim 22, see discussion above of claim 8.

Claims 18, 21, 24, 25, 27, and 33, 35, and 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kountz in view of Benevelli et al.

As per claim 18, see discussion above of claim 6.

As per claim 21, see discussions above of claim 7.

As per claim 24, see discussions above of claims 17 and 6.

As per claims 25 and 27, see discussions above of claims 19 and 7, respectively.

As per claim 35, Kountz teaches a method of modulating the capacity of compressor 10 comprising a port (at bottom side of compressor in Figure 1) through which refrigerant is supplied to the compression chamber, and rapidly cycling the solenoid valve 21 disposed upstream of the port. Kountz does not specifically state that the valve is cycled between fully open and closed positions, however this limitation is disclosed by Benevelli et al. (see discussion above of claim 6).

As per claim 36, see discussion above of claim 4 regarding the cycling time being shorter than the response time of the system.

As per claim 36, Benevelli et al. teaches the cycling controlling the percentage of time the valve is fully open (see for example Figure 4).

As per claim 38, see discussion above of claim 7.

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Allowable Subject Matter

Claims 1-3 are allowed.

Claims 29-32 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 251 set forth in this Office action.

Claims 13, 16, 20, 23, 26, 28, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 251 set forth in this Office action.

Interference

Acknowledgement is made of Applicant's request for interference under 37 C.F.R. 1.607. Applicant is advised that, in keeping with PTO practices and procedures, such interference will not be conducted until such time that the present application is deemed in condition for allowance.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Doepker et al., Gutierrez et al., and Gobeaux et al.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 703-305-2711. The examiner can normally be reached on Mon.-Fri., 8:00-5:30, with first Fridays off.

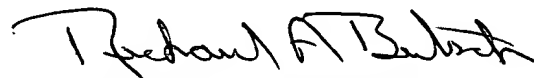
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 703-308-2597. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

MN

April 19, 2002


Marc Norman
Patent Examiner
Art Unit 3744


RICHARD A. BERTSCH
APPROVED
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